

## Message Text

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ACTION EUR-12

INFO OCT-01 ISO-00 FEA-01 ACDA-10 CIAE-00 INR-07 IO-10

L-03 NSAE-00 NSC-05 EB-07 NRC-07 OES-05 DODE-00 /068 W

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R 181720Z DEC 75

FM USMISSION EC BRUSSELS

TO ERDA GERMANTOWN

INFO SECSTATE WASHDC 187

AMEMBASSY PARIS

UNCLAS EC BRUSSELS 11358

ERDA PASS TO N. SIEVERING,AIA,T. NEMZEK AND S.E..MILLER,RRD;  
H.C. KOUTS,NRC; R.P.DENISE,NRC; J LAFLEURNRC

E.O. 11652: N/A

TAGS: TECH, FR

SUBJECT: PHENIX REACTOR STATUS

1. OPERATION OF THE 250 MWE PHENIX REACTOR CONTINUED AT HIGH  
AVAILABILITY (ABOUT 75 PERCENT) DURING OCTOBER AND NOVEMBER.

2. ELECTRICAL GENERATION IN DECEMBER WILL BE LIMITED AS A  
RESULT OF A LEAK WHICH DEVELOPED ON NOVEMBER 24 IN THE FEED-  
WATER SYSTEM OF ONE OF THE THREE STEAM GENERATOR UNITS.  
SODIUM COOLANT WAS NOT INVOLVED. THE PLANT  
WAS DOWN FOR TWO WEEKS WHILE THE CAUSE OF THE LEAK WAS DETERMINED  
AND THE REMAINING UNITS EXAMINED. A TURBINE BEARING FAILURE CAUSED  
AND ADDITIONAL ONE WEEK DELAY IN START UP. THE PLANT WAS FINALLY  
PLACED BACK INTO SERVICE AT 2/3 POWER ON 12/13.IT IS EXPECTED  
THAT FULL POWER APARTIONS WILL BE RESUMED AFTER THE NEXT REFUELING  
OUTAGE SCHEDULED FOR THE WEEK OF JANUARY 12.

3. THE LEAK DEVELOPED AT THE WATER INLED TO ONE STEM GENERATOR  
MODULE (EACH STEM GENERATOR IS COMPRISED OF TWELVE MODULES).  
A MODULE CONSISTS OF A CLUSTER OF SEVEN TUBES (28 MM OD, 4  
MM WALL) INSIDE A LARGER TUBE SHELL (193.7 MM OD, 6.3 MM WALL)  
BENT IN THE SHAPE OF AN S. THE WATER CIRCULATES UPWARDS INSIDE  
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THE SMALLER TUBES,THE SODIUM DOWNWARDS. A WATER INLET MANIFOLD

(HEADER) FEEDS HIGH PRESSURE WATER INTO EACH OF THE SEVEN TUBES  
CONNECTED TO IT. TUBE MATERIAL IS A 48  
FERRITIC STEEL. ORIFICES WERE INSTALLED IN THE INLET TO THE  
WATER TUBES TO ENSURE STABLE OPERATION AT LOW POWER LEVELS.  
JET ACTION ERODED TO PROTECTIVE MAGNETITE LAYER DOWNSTREAM OF  
THE ORIFICES, EVENTUALLY RESULTING IN THE CORROSIVE FAILURE OF ONE  
OF THE TUBES. ALL THREE MODULES HAVE BEEN EXAMINED AND SHOW  
VARYING DEGREES OF WASTAGE.

4. IT IS PLANNED TO REPAIR THE FAILED UNIT BY PLACING STAINLESS  
STEEL INSERTS IN THE TUBE INLETS. EVENTUALLY, ALL EXISTING  
STEAM GENERATOR FEED WATER INLET HEADERS WILL BE REPLACED BY  
HEADERS OF NEW MATERIAL. IT IS PLANNED TO ACCOMPLISH THIS DURING  
REFUELING OUTAGES IF POSSIBLE.  
GREENWALD

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## Message Attributes

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